(11)

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

DATE:	**10/8/99**
SUBJECT:	Naples Truck Stop Removal Action, Vernal, UT
FROM:	H. Hays Griswold, OSC Phone: (303) 312-6809
TO:	Director, ERD
POLREP No.:	**POLREP 65**

II. BACKGROUND

SITE No.:	43P808L008
Case No.:	U940169
FPN No.:	114009
D.O. No.:	NA
Response Agency:	EPA Region VIII
Address:	999 18th Street, Suite 500 Denver, CO 80202
Response Authority:	CWA, OPA (1990)
Party Conducting Action:	EPA (PRFA w/USACE)
ERNS No.:	U940169
NPL Status:	NA
State Notification:	State requested EPA action
Action Memorandum Status:	NA
Start Date:	February 22, 1994
Demobilization Date:	NA
Completion Date:	To Be Determined

III. SITE INFORMATION

A. Incident Category

The incident occurred at an active facility - a Service Station/Truck Stop/Petroleum Bulk Distributor.

B. Site Description

1. Site Description

No change from previous Polreps.

2. Description of Threat

No change.

C. Site Evaluation Results

Active treatment was terminated in October 1998 and replaced by a long-term passive phytoremediation system consisting of approximately 300 Sioux-land poplar trees. These were planted down-gradient and cross-gradient of the plume after the October 1998 sampling event. Groundwater sampling from **fourteen** of the sixteen existing monitoring wells was resumed in May 1999, following a six-month pause. This report summarizes the results of the second of three annual rounds of sampling conducted 19 August 1999.

Detectable levels of hydrocarbon contamination were found within **seven** of the tested wells. A maximum concentration of **23** mg/l hydrocarbons as gasoline was detected from monitoring well MW10, located in the center of the suspected plume of groundwater contamination. This level of contamination is **higher** than the **13** mg/l maximum detected value reported in **May 1999** but is within the range of concentrations in MW10 reported in 1998. When seasonal variability is taken into account, the results indicate no significant plume movement or change in concentrations has occurred over the past 12 months.

Field measurements of dissolved oxygen (DO) and oxidation-reduction potential (ORP) were also made. The data were not suggestive of active bioremediation but showed that DO was available at concentrations sufficient to promote activity. Bioremedial activity must therefore be limited by other factors. Field measurements of ORP did not yield useful information.

Water analysis was performed for gasoline/BTEX by EPA test methods M8015V and SW8260. (See Attachment A for the Data Quality Assessment and a summary of results).

IV. RESPONSE INFORMATION

A. Situation

Date of Notification:	2/08/94
Date of Discovery:	11/01/93
Date Action Started:	2/15/94
Material Involved:	Unleaded Gasoline
Quantity Discharged:	7000 + gallons
Substantial Threat:	Yes
Resource Affected:	Unnamed tributary to Ashley Creek, tributary to Green River
Source Identification:	Naples Truck Stop

1. **Removal Actions to Date**

Active groundwater treatment was terminated in October 1998 and replaced by a passive phytoremediation system utilizing Sioux-land poplar trees. Planted in November 1998, the trees survived the winter without casualties.

2. **Enforcement**

No change from previous Polreps.

B. Planned Removal Actions

The next round of sampling, scheduled for the fall of 1999, marking the end of the active growing season, may provide the first indication of the effectiveness of phytoremediation.

C. Next Steps

Continue to monitor the groundwater monitoring wells. Next sample the groundwater monitoring wells in **October or early November 1999**. Continue monitoring on a thrice-yearly scheduled through the year 2000.

D. Key Issues

The table compares levels of gasoline in monitoring wells for **September and October 1998** with those for **May and August 1999.**

Well No.	September 1998	October 1998	May 1999	August 1999
MW01	ND	ND	ND	ND
MW02	1.2	0.39	2.0	2.0
MW03	0.060 J	ND	ND	ND
MW04	ND	ND	0.78	0.64
MW06	0.90	0.69	ND	Trace (0.03)
MW08	2.2	2.2	6.2	3.3
MW09	0.37	0.11	0.53	0.23
MW10	31	25	13	23
MW14	0.030 J	0.033	ND	ND
MW15	0.041 J	0.027	ND	ND
VMP01	ND	ND	ND	ND
VMP02	4.5	1.2	5.6	3.1
NGMW01	0.039 J	ND	ND	ND
NGMW06	ND	ND	ND	ND

Note: J indicates that the result is an estimated value

BTEX was not found in eight wells – MW01, MW03, MW06, MW14, MW15, VMP01, NGMW01, and MGMW06. Compared to May 1999 results, the levels of BTEX and gasoline remained approximately constant in 12 of the 14 wells. The level of gasoline in MW10 increased from 13 to 23 mg/L, a modest increase, while the levels of benzene, ethylbenzene,

and gasoline in VMP02 decreased. The most significant drop was that of benzene in VMP02 which decreased from 3,900 to 1,100 µg/L.

The results suggest that the boundaries of the plume and the total mass of hydrocarbon have remained fairly stable since the start of the spring growing season. It is still too early to evaluate the effectiveness of the siouxland poplar trees.

V. COST INFORMATION

Project Ceiling . . . . . .$ **2,850,000.00**

	Costs to Date	Ceiling
Extramural		
TAT	$ 60,000	$ 70,000
USACE (Omaha)	$ 850,000	$ 1,300,000
USACE (Sacramento)	**$1,546,842**	$ **1,664,721**
Intramural		
Direct Reimbursable	$ 9,000	$ 30,000
Direct Recoverable	$ 9,000	

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report is written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

REMOVAL CONTINUES:
H. Hays Griswold, OSC
1500 hrs, October 5, 1999

c: Rich Haavisto, USACE-Sacramento
Renee Zollinger, Kleinfelder
Larry Schaleger, Jacobs
Robert Sextro, Jacobs

ATTACHMENT A

Data Quality Assessment

Introduction

This data quality assessment (DQA) for the Naples Truck Stop System is applicable to the analytical results for the following groundwater samples (listed in Table 1) collected on August 19, 1999.

TABLE A-1 - SAMPLE LOCATION SUMMARY		
Sample Location Name	*Sample Location ID*	*Number of Locations*
Groundwater Monitoring Wells	MW01 - 04, 06, 08 - 10, 14, 15, and NGMW01 & 06	twelve groundwater (GW) wells
Vapor Monitoring Point #1	VMP01	one GW port
Vapor Monitoring Point #2	VMP02	one GW port

All groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) by Method SW8020, and total volatile petroleum hydrocarbons (TVPH) as gasoline by Method SW8015. All method-defined QA/QC requirements specified in SW-846 Test Methods for Evaluating Solid Waste Physical (Chemical Methods, US EPA, January 1995, 3rd edition, Updates I, II, IIA, and IIB) were followed. All groundwater samples were analyzed by EMAX Laboratories, Torrance, CA.

The data are of acceptable quality and are considered usable to support the U.S. Army Corps of Engineers (USACE), Naples Utah Truck Stop Project. The precision, accuracy, and completeness objectives for this sampling event were met with noted exceptions. Table A-2 (A & B) shows the sampling and analytical completeness. Completeness is measured in two ways; 1) sampling completeness (samples collected vs. planned), and 2) analytical completeness (percent of acceptable (non-rejected) analytical results vs. the total number of results reported).

Data Evaluation Process

One-hundred percent of the data was verified by a Jacobs project chemist in accordance with the general principles defined in the Jacobs Data Verification SOP. The following quality control (QC) parameters were evaluated:

- Sample preservation
- Holding times
- Laboratory method blanks
- Trip blanks
- Laboratory control sample and laboratory control sample duplicate (LCS/LCSD) recoveries and precision
- Matrix spike and matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision
- Surrogate recoveries

- Sample dilutions

Analytical results that required the addition of a qualifier flag based on the evaluation process are discussed below. When a result is qualified, a reason code is also added to the affected sample result to indicate the rationale for data qualification. Both the qualifier and reason code are entered into the database. The qualifier flags and reason codes applied to sample results for this project data set are summarized below:

Qualifier Flags

UJ	=	the analyte was reported as not detected at an estimated detection limit.
J	=	the analyte concentration is estimated

Reason Codes

T	=	trace concentration detected
2	=	Method blank contamination
7	=	Trip blank contamination

Laboratory Method Blanks

There were no contaminants detected in method blanks with the exception of trace toluene concentrations reported in two method blanks analyzed by Method SW8020. Analyte results for three associated samples, in which the toluene levels were less than five times the blank concentration, were changed to non-detects with 'UJ' flags and '2' reason codes. (see Table A-3). The toluene method detection limits (MDLs) for the affected samples were raised to the reported sample concentrations and are considered estimated. Data qualification was not required for sample concentrations greater than five times the blank concentration.

Field Blanks

Toluene was detected at a trace concentration in one trip blank analyzed by Method SW8020. Analyte results for six associated samples, in which the toluene levels were less than five times the blank concentration, were changed to non-detects with 'UJ' flags and '7' reason codes. (see Table A-3). The toluene MDLs for the affected samples were raised to the reported sample concentrations and are considered estimated. Data qualification was not required for sample concentrations greater than five times the blank concentration.

All other QC criteria were within acceptance criteria, and there were no other qualified data other than trace level concentrations (above the MDL, but below the practical quantitation limit). These data have been qualified as estimated ('J' flag with a 'T' reason code). A summary of all analytical results, including data qualifier flags and reason codes is presented in Table A-3.

Completeness

Overall sampling and analytical completeness objectives (90 percent) were met for all analytical methods (see Table A-2(A) and A-2(B)).

TABLE A-2(A)* – SAMPLING COMPLETENESS	
Sample Event	Phytoremediation Monitoring, Naples Truck Stop
Laboratory	EMAX Laboratories
Matrix	Groundwater
Analytical Methods	M8015V and SW8020 (BTEX)
Sampling Date	August 19, 1999
Total Number of Samples Planned	14
Total Number of Samples Collected	14
Sampling Completeness (%)	100

TABLE A-2(B)* - ANALYTICAL COMPLETENESS	
Sample Event	Phytoremediation Monitoring, Naples Truck Stop
Laboratory	EMAX Laboratories
Analytical Methods	M8015V and SW8020 (BTEX)
Sampling Date	August 19, 1999
Total Number of Samples Analyzed	14
Total Number of Results Reported	70
Total Number of Results Accepted	70
Total Number of Results Rejected	0
Analytical Completeness (%)	100

* Table A-2 does not include TBs and FDs.

Summary

The data are of acceptable quality and are considered usable to support the U.S. Army Corps of Engineers (USACE), Naples Utah Truck Stop Project. The precision, accuracy, and completeness objectives for this sampling event were met except as previously noted.

TABLE A-3
NAPLES TRUCK STOP
AUGUST 19, 1999 ANALYTICAL SUMMARY
LAB #: 99H073

Location	Sample Date	Benzene	Toluene	Ethyl Benzene	Xylenes	Gasoline
	UNITS	ug/L	ug/L	ug/L	Ug/L	ug/L
MW01	19-Aug-99	ND @ 0.28	ND @ 0.58 UJ(27)	ND @ 0.29	ND @ 0.64	ND @ 18
MW02	19-Aug-99	9.2	ND @ 0.61 UJ(7)	22	7.1	1960
MW03	19-Aug-99	ND @ 0.28	ND @ 0.7 UJ(27)	ND @ 0.29	ND @ 0.64	ND @ 18
MW04	19-Aug-99	7.8	ND @ 1.8 UJ(7)	37	57	642
MW05	NOT COLLECTED					
MW06	19-Aug-99	ND @ 0.28	ND @ 0.6 UJ(27)	ND @ 0.29	ND @ 0.64	29 J(T)
MW06 FD	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW07	NOT COLLECTED					
MW08	19-Aug-99	44	ND @ 0.28	96	450	3330
MW09	19-Aug-99	1.0 J(T)	ND @ 0.65 UJ(7)	5.3	ND @ 0.64	233
MW10	19-Aug-99	5500	53	1700	1500	23400
MW12	NOT COLLECTED					
MW14	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW15	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
NGMW01	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
NGMW06	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
VMP01	19-Aug-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
VMP02	19-Aug-99	1100	ND @ 0.28	10	8.7	3060
TB	19-Aug-99	ND @ 0.28	0.7 J(T)	ND @ 0.29	ND @ 0.64	ND @ 18

Legend:
ND = not detected at method detection limit
FD = field duplicate
TB = trip blank

JACOBS ENGINEERING

June 2, 2000

Transmittal
Tr# 00_005

TO: Mr. Rich Haavisto
Technical Manager
U.S. Corps of Engineers
Environmental Engineering Branch
1325 J Street, 12th floor
Sacramento, CA. 95814-2922

FROM: Tom Lae (TL)
Project Manager
Jacobs Engineering Group
2525 Natomas Park Drive, Suite 370
Sacramento, CA 95833

ON: Contract No. DACW05-98-P-0763
JEG Project No. 27-T031-00 Vernal,Utah - Vernal Naples Truck Stop

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JACOBS ENGINEERING

October 12, 1999

Transmittal
Tr# 99_002

TO: Mr. Rich Haavisto
Technical Manager
U.S. Corps of Engineers
Environmental Engineering Branch
1325 J Street, 12th floor
Sacramento, CA. 95814-2922

FROM: Larry Schaleger
Project Manager
Jacobs Engineering Group
2525 Natomas Park Drive, Suite 370
Sacramento, CA 95833

ON: Contract No. DACW05-98-P-0763
JEG Project No. 27-T031-00 Vernal,Utah - Vernal Naples Truck Stop

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